

## Federation of Earth Science Information Partners Partnership Application

Please complete all sections to the fullest extent possible and forward completed application to: Carol Meyer, [carol.meyer@earthsciencefoundation.org](mailto:carol.meyer@earthsciencefoundation.org). If you have any questions, please contact her at 877.870.3747.

### I. CONTACT INFORMATION

#### A. Primary Contact/Principal Investigator

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#### B. Designated Assembly Representative (could be same as above)

Name: Same as above  
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#### C. Other Contacts

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## II. ABOUT YOUR ORGANIZATION

### A. ORGANIZATION/DIVISION/PROJECT NAME:

CLEANER Project Office

The National Center for Supercomputing Applications (NCSA) at the University of Illinois at Urbana-Champaign (UIUC) has received an NSF grant of \$2 million to lead a two-year intensive effort with a coalition of 13 institutions to develop a roadmap for CLEANER, the Collaborative Large-scale Engineering Analysis Network for Environmental Research.

### B. OVERVIEW OF YOUR PRIMARY ACTIVITIES (250 words or less)

CLEANER aims to fundamentally transform and radically advance the scientific and engineering knowledge base for addressing the challenges of large-scale human-stressed complex systems through collaborative modeling and knowledge networks.

CLEANER will enable the development of integrated community models of anthropogenically-stressed large-scale environmental systems, such as the coastal margins and river and estuary systems. Dynamically interactive modeling will enhance understanding of how these systems evolve over time and allow testing of alternative theories of adaptive management.

CLEANER will be a networked infrastructure of environmental field facilities working to promote multidisciplinary research on adaptive environmental management and acting as test-beds for cyberinfrastructure investments, thus enabling the formulation and development of engineering and policy options for the restoration and protection of environmental resources.

The CLEANER project office was established in August of 2005 and is headquartered in Arlington, VA. Over the next two years, the project office will coordinate planning efforts with the Consortium of Universities for the Advancement of Hydrologic Science, Inc. (CUAHSI; [www.cuahsi.org](http://www.cuahsi.org)), including refining the key science questions and grand challenges to be tackled by CLEANER, developing a unified vision for the facilities and sensor technology required, understanding the cyberinfrastructure requirements, determining how social scientists and economists can be involved in CLEANER, and outlining strategies for the educational component of CLEANER at the K-12, undergraduate, and graduate levels.

### C. Please list and briefly describe the primary product(s) or service(s) that your organization provides (will provide) to the community.

The CLEANER project office is coordinating with CUAHSI to lead the national planning effort to define the WATERS (WATer and Environmental Research Systems) Network, which will consist of the following elements:

1. A network of highly instrumented field facilities for acquisition and analysis of environmental data
2. A virtual repository of data and information technology for engineering modeling, analysis and visualization of data, i.e. an environmental cyberinfrastructure
3. A mechanism for multi-disciplinary research and education to exploit instrumented sites and networked information; formulate engineering and policy options to protect, remediate, and restore stressed environments and promote sustainable environmental resources.
4. A collaboration among engineers, natural and social scientists, educators, policy makers, industry, NGOs, the public, and other stakeholders

D. Please give a main website address for the proposed Partnership:

Web Address: <http://cleaner.ncsa.uiuc.edu>

### **III. HOW YOUR ORGANIZATION WILL BENEFIT FROM/CONTRIBUTE TO THE EARTH SCIENCE INFORMATION PARTNERS (ESIP) FEDERATION**

- A. Describe current or anticipated users of your products and services and how you think the Federation can help you better serve this population. (200 words or less)

Our current users come from the hydrology and environmental engineering academic research communities. The federation will help us to network with other organizations and data providers to learn how our users can benefit from their data and information technology activities.

- B. Describe any Earth science technologies that you have developed and are willing to bring to the Federation's efforts to provide best-practices. (200 words or less)

The CLEANER Project Office is developing the CLEANER/CUAHSI CyberCollaboratory which is a collaborative space where communities of researchers, practitioners, policy-makers, and others come together to share knowledge and information, analyze data, solve problems and collaborate. Each community will have their own customizable collaboratory workspaces where they can integrate and utilize tools and forums that advance their community's work in the environment. Activities in the CyberCollaboratory can be mined to notify users about other people, data, documents, and information of interest.

- C. Describe how your proposed membership would contribute to the efforts and the mission of one or more standing committees, working groups and/or clusters. See Page 3 for descriptions of the different activities of the various standing committees, working groups, and clusters. (200 words or less)

The WATERS Network will have a broad impact in three areas: education, community outreach, and forecasting infrastructure. Specifically, CLEANER will 1) develop a more diverse undergraduate and graduate student population that is educated in environmental cyberengineering, 2) offer outreach services to the communities in order to transfer the technology to decision makers, community leaders, and students, and 3) provide powerful diagnostic tools for understanding changes in the environment. These efforts should contribute to the mission of the ESIP Community Engagement, Education, and Information Technology & Interoperability committees.

- D. Describe your own use of Earth science information and data and how you would see this use enhanced by your partnership in the Federation. (200 words or less)

The CyberCollaboratory currently makes use of the CUAHSI Hydrologic Data Access System which provides uniform access to several national-scale water resource databases, including the USGS NWIS and the AmeriFlux Network. We are interested in expanding our capabilities for allowing researchers to share information and collaborate in real time using additional sources of hydrologic and other earth science data such as those provided by ESIP partners.

**IV. YOUR CHOICE OF MEMBERSHIP TYPE. PLEASE PICK ONE.**

ESIP-I (primarily a data archive center)



ESIP-II (primarily a research center)



ESIP-III (primarily applications and education)



ESIP-IV (primarily a sponsoring member)



**V. Any other comments about your proposed membership and its relation to the Federation that you wish to provide.**

**Thank you for your application for partnership in the ESIP Federation.**

## List of Federation Committees and Clusters

### Administrative Committees

*Executive Committee:* Comprised of all standing and administrative committee chairs, ESIP Type Representatives, the President and Vice President of the Federation. Oversight body for most day-to-day activities of the Federation, acts on behalf of the Assembly between meetings.

*Constitution and Bylaws:* Provides counsel on matters related to the constitution and bylaws and other related issues (e.g. amendments to government documents)

*Finance and Appropriations:* Oversees financial resources of the Federation, including the annual budgeting process.

*Partnership:* Reviews and processes all applications for membership before making applications available for review by members of the Federation. Deals with other membership-related issues.

### Standing Committees:

*Commercial Development:* Promotes a forum wherein commercial development of Earth science information can be fostered.

*Community Engagement:* Provides a forum for the Federation to promote partner products and to engage new users for data products and services.

*Education:* Provides a forum to make accessible to educators and learners at all levels in both formal and informal educational contexts the Earth science data, information, tools, and curricula available within the ESIP Federation.

*Information Technology and Interoperability:* Provides a forum for discussing information technology and interoperability issues of the Earth science community and serves as a central point for activities in this realm.

*Products and Services:* Provides a forum for defining best practices and defining requirements for earth science products and services. Currently is involved in developing an inventory of partner products and services.

### Clusters (presently active, April 2005):

GIS

Intelligent Systems

Air Quality